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January 1932

Test 208: Caterpillar Diesel

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 208

Dates of test: June 14 to July 20, 1932.

Name and model of tractor: CATERPILLAR "DIESEL"

Manufacturer: Caterpillar Tractor Company, Peoria, Illinois.

Manufacturer's rating: NOT RATED.

Highest rating permissible under the recommendations of the A.S.A.E. and

S.A.E. Tractor Rating Codes: Drawbar - 54.00 H.P. Belt - 73.85 H.P.

One carburetor setting (96% of maximum) was used throughout this test.

B R A K E H O R S E P O W E R T E S T S

| H. P. | :Crank : :shaft : | Fuel Consumption :Gals. : :H.P. : :lbs. @ : :Cool- : :In : :Cool- : :Inches of | Water consumption : per hour gallons : Deg. F. : :Barometer | Temp. : :Boremeter |
|-------|--|---|--|-----------------------|
| | :speed : :R.P.M. : : per : : hour : | :H.P. : :hrs. @: : :H.P. : :gal. : :hour : | :sing : :fuel : :Total : :ing : :Air : :Mercury | :mod. : : : |

OPERATING MAXIMUM LOAD TEST. ONE HOUR

| | | | | | | | | | | |
|-------|-------|---------|---------|---------|---------|--------|---------|-------|-------|----------|
| 77.08 | : 700 | : 5.976 | : 12.90 | : 0.580 | : 1.936 | : 0.00 | : 1.936 | : 212 | : 102 | : 28.605 |
|-------|-------|---------|---------|---------|---------|--------|---------|-------|-------|----------|

RATED LOAD TEST. ONE HOUR

| | | | | | | | | | | |
|-------|-------|---------|---------|---------|--------|--------|--------|-------|------|----------|
| 74.73 | : 702 | : 5.388 | : 13.87 | : 0.540 | : 0.00 | : 0.00 | : 0.00 | : 201 | : 73 | : 28.855 |
|-------|-------|---------|---------|---------|--------|--------|--------|-------|------|----------|

*VARYING LOAD TEST. TWO HOURS

| | | | | | | | | | | |
|-------|-------|---------|---------|----------|--------|--------|--------|-------|------|----------|
| 74.98 | : 702 | : 5.457 | : 13.74 | : 0.545 | : --- | : --- | : --- | : 202 | : 75 | : --- |
| 0.57 | : 749 | : 1.567 | : 0.36 | : 20.579 | : --- | : --- | : --- | : 180 | : 74 | : --- |
| 38.93 | : 735 | : 3.157 | : 12.33 | : 0.607 | : --- | : --- | : --- | : 188 | : 76 | : --- |
| 75.87 | : 683 | : 5.750 | : 13.19 | : 0.567 | : --- | : --- | : --- | : 196 | : 75 | : --- |
| 19.89 | : 743 | : 2.312 | : 8.60 | : 0.870 | : --- | : --- | : --- | : 194 | : 77 | : --- |
| 56.37 | : 716 | : 4.003 | : 14.08 | : 0.532 | : --- | : --- | : --- | : 199 | : 77 | : --- |
| 45.36 | : 721 | : 3.708 | : 12.23 | : 0.612 | : 0.00 | : 0.00 | : 0.00 | : 193 | : 75 | : 28.840 |

*20 minute runs. Last line is average for two hours.

D R A W B A R H O R S E P O W E R T E S T S

| H. P. | :Draw : :Bar : | Speed : :miles : :per : :hour : | Crank : :shaft : :speed : :R.P.M. : : % : | Slip : :on : :drive : :wheels : :per : :hour : | Fuel Consumption :Gal. : :hour : :per : :H.P. : :gal. : :hour : | Water: :used : :Gal. : :per : :H.P. : :per : :hour : | Temp. : :Cool- : :Air : :ing : :mod. : : : | :Barometer :Inches of :Mercury |
|-------|-------------------|--|---|---|---|--|---|--------------------------------------|
|-------|-------------------|--|---|---|---|--|---|--------------------------------------|

RATED LOAD TEST. TEN HOURS. SECOND GEAR.

| | | | | | | | | | | | |
|-------|--------|--------|-------|--------|---------|---------|---------|--------|-------|------|----------|
| 53.78 | : 7300 | : 2.76 | : 702 | : 1.05 | : 4.611 | : 11.66 | : 0.642 | : 0.00 | : 191 | : 89 | : 28.650 |
|-------|--------|--------|-------|--------|---------|---------|---------|--------|-------|------|----------|

MAXIMUM LOAD TEST

| | | | | | | | | | | |
|-------|---------|--------|-------|--------|---------|----------------|---------|-------|-------|----------|
| 65.11 | : 11991 | : 2.04 | : 699 | : 1.22 | : ----- | : Not Recorded | : ----- | : 195 | : 100 | : 28.795 |
| 64.55 | : 8817 | : 2.75 | : 699 | : 1.22 | : ----- | : " " | : ----- | : 208 | : 103 | : 28.800 |
| 55.83 | : 4449 | : 4.71 | : 701 | : 0.52 | : ----- | : " " | : ----- | : 185 | : 101 | : 28.800 |

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BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 1 C 15 Type 4 Cylinder, Vortical, Diesel
Head I Mounting Lengthwise
Bore and stroke: 6 1/8" x 9 1/4" Rated R.P.M. 700
Port Dia. Valves: Inlet 2 5/16" Exhaust 2 5/16"
Belt pulley: Diam. 15" Face 11" R.P.M. 700
Fuel System: Robert Bosch
Governor: Own No. None Type Flyball
Air Cleaner: Own under Vortex patents Type Centrifugal, oil and matted wire
Lubrication: Pressure
CHASSIS: Type Tracklayer Serial No. 1 C 15 Drive Enclosed gear
Clutch: Own Type Single plate - dry operated by hand lever
Advertised speeds, miles per hour: Low 2.1
Intermediate 2.8 High 4.7 Reverse 1.5
Measured length of track 22.7481 feet Face 16 inches
Lugs: Type Cleats integral with shoes No. per track 34 Size 16" x 2 1/2"
Extension rims: None
Seat: Upholstered
Total weight as tested (with operator) 25,860 pounds.

FUEL AND OIL

Fuel: Fuel oil Weight per gallon 7.487 lbs.
Oil: S. A. E. Viscosity No. 50 The oil was drained once ..
at the end of the test.
Total oil to motor 7.013 gallons
Total drained from motor 5.292 gallons
Total time motor was operated 54 hours

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REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

REMARKS

The tests herein reported were conducted with one carburetor setting which remained unchanged throughout the tests. This condition should be recognized when comparing this test with any Nebraska test conducted prior to 1928.

The track and lug equipment used in the drawbar tests is the same as that described on page 2 of this report.

In the advertising literature submitted with the specifications and application for test of this tractor we find no claims and statements which, in our opinion, are unreasonable or excessive.

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 208.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis
Board of Tractor Test Engineers